

# Notice of Allowability

Application No.

10/618,851

Examiner

Chriss S. Yoder, III

Applicant(s)

KOKUBUN ET AL.

Art Unit

2622

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 07/15/2003.
2. ☒ The allowed claim(s) is/are 1-10.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_



VIVEK SRIVASTAVA  
SUPERVISORY PATENT EXAMINER

## **DETAILED ACTION**

### ***Allowable Subject Matter***

Claims 1-10 are allowed.

The following is an examiner's statement of reasons for allowance:

As for claim 1, the prior art does not teach or fairly suggest the use of an image sensor for capturing an image having a sample hold circuit that outputs, as a pixel signal, a differential potential between a first pixel potential at an end of an integration period after a first reset operation of said pixels and a second pixel potential at an end of a reset noise read period after a second reset operation after said integration period, wherein, when said pixel potential during said reset noise read period exceeds a predetermined threshold level, said second pixel potential is set to a predetermined reference potential.

As for claim 5, the prior art does not teach or fairly suggest the use of an image sensor for capturing an image having a sample hold circuit that outputs, as a pixel signal, a first differential potential between a first pixel potential at an end of an integration period after a first reset operation of said pixels and a second pixel potential at an end of a reset noise read period after a second reset operation after said integration period, or alternately, a second differential potential between said first pixel potential and the pixel potential at the first reset, instead of said first differential potential, when said pixel potential during said reset noise read period exceeds a predetermined threshold level.

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As for claim 8, the prior art does not teach or fairly suggest the use of an image sensor for capturing an image having a sample hold circuit that outputs, as a pixel signal, a differential potential between a first pixel potential at an end of an integration period after a first reset operation of said pixels and a second pixel potential at an end of a reset noise read period after a second reset operation after said integration period, wherein said sample hold circuit further comprises a control circuit which detects that said pixel potential exceeds a predetermined threshold level in said reset noise read period so as to set said second pixel potential to the reset potential.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 20020118289A1: note the use of a correlated double sampling unit having a comparator for comparing the pixel signal with a reference voltage.

US006803958B1: note the use of a correlated double sampling unit having a comparator for comparing the pixel signal with a reference voltage.

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US006423957B1: note the use of a comparator to compare the pixel reset value with a reference value in order to adjust the reference value for use as the voltage level of the A/D conversion range.

US006667768B1: note the use of an image array having a global reset, followed by integration and then a local reset, in order to output the integration and local reset values to a correlated double sampling unit and reduce row reset noise.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chriss S. Yoder, III whose telephone number is (571) 272-7323. The examiner can normally be reached on M-F: 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on (571) 272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CSY  
October 24, 2006



VIVEK SRIVASTAVA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600